

## AMENDMENTS TO THE CLAIMS

**1. (Currently Amended)** A method for quantitatively analyzing specimen molecules, which method comprises:

(1) simultaneously passing a solution containing the specimen molecules and a separate solution containing fluorescent probe molecules capable of forming a complex with the specimen molecules through a micro flow channel such that-a laminar flow is formed; formed therein, wherein diffusion of solutes in the solutions is accelerated by affinity between the fluorescent probe molecules and the specimen molecules to form complexes; and

(2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecules and the specimen molecules in the laminar flow; and

(3)(2) fluorometrically determining the degree of diffusion of the complex complexes formed between the specimen molecules and the probe molecules within the micro flow channel by detecting signals emitted from the fluorescent probe molecules and comparing the results to a predetermined calibration curve to quantitatively analyze the specimen molecules.

### **2-3. (Cancelled)**

**4. (Currently Amended)** A method for quantitative determination of a DNA fragment, which method comprises:

(1) simultaneously passing a solution containing a DNA fragment of a specified sequence as a specimen molecule and a separate solution containing a fluorescent probe molecule capable of forming a complex with the specimen molecule through a micro flow channel such that-a laminar flows are formed; formed therein, wherein diffusion of solutes in the solutions is accelerated by affinity between the fluorescent probe molecules and the specimen molecules to form complexes; and

(2) selectively promoting diffusion of the complex formed according to affinity between the fluorescent probe molecule and the specimen molecule in the laminar flow; and

(3)(2) detecting changes in the degree of diffusion of the complexthe complexes formed between the specimen molecule and the fluorescent probe molecule within the micro flow channel by detecting signals emitted from the fluorescent probe molecule and comparing the

results to a predetermined calibration curve to fluorometrically determining the content of the specimen molecules.